Patent claims

1.

An apparatus for seismic measurements, wherein a seismic source and hydrophone devices are towed behind a vessel, and wherein a pair of deflectors are used that are submerged in the sea and have a means between them designed to ensure that the spacing between the hydrophone devices transverse to the vessel's direction of travel is maintained in that, as the vessel moves, the deflectors seek to move in a direction transverse to the vessel's direction of travel, a wire being fastened between the said deflectors in order to limit the spacing between the deflectors, characterised in

- that spaced apart and mounted on the said wire are hydrophone devices which in relation to the spacing of the devices have a short lengthwise extent transverse of the wire in the vessel's direction of travel, and wherein the devices are connected together by a hydrophone signal cable which extends along the said wire;
- that the hydrophone devices consist of short streamers that extend parallel to the vessel's direction of travel and have a lengthwise extent that is 25-400% of the spacing between the streamers;
- that each streamer has **m** hydrophones and where the signals are summed up analogously and form a single-channel hydrophone device;
- that a total of **n** hydrophone devices are mounted on the cable; and
- that the apparatus comprises an **n**-channel sampling device for sampling all the hydrophone devices simultaneously.

2.

An apparatus as disclosed in claim 1, characterised in

- that the seismic source is located between the vessel and the hydrophone signal cable that extends along the wire.

3.

An apparatus as disclosed in claim 1, characterised in

- that a seismic source is located on one or both of the deflectors.

4.

An apparatus as disclosed in claim 1, characterised in

- that said lengthwise extent is 80% of said spacing.

5.

An apparatus as disclosed in claim 1 or 4, characterised in that the short streamers have a length in the range of 1-25 metres, preferably 12.5 metres.

6.

An apparatus as disclosed in claim 1, characterised in

- that $\mathbf{n} > \mathbf{m}$.

7.

An apparatus as disclosed in claim 1, characterised in

- that $\mathbf{n} \leq \mathbf{m}$.

8.

An apparatus as disclosed in claim 6 or 7, characterised in

- that **m** is an integer between 6 and 24; and
- that **n** is an integer between 12 and 96.

9.

An apparatus as disclosed in claim 1 or 3, characterised in

- that $\mathbf{n} = 24$; and
- that $\mathbf{m} = 12$.

10.

An apparatus as disclosed in one or more of the preceding claims, characterised in

- that the signal cable to which the hydrophone devices are attached is connected via an outlet on the signal cable to the signal control and processing equipment on board the vessel by means of an additional signal cable that extends from the cable outlet to the vessel.

11.

The use of an apparatus for seismic measurements as disclosed in one or more of claims 1-10, for seismic measurements in a seabed at a distance downwards that corresponds approximately to the depth of the sea from the surface to the seabed at the measuring point.